Remarks

Applicants appreciate the Examiner's withdrawal of the rejection of independent claim 1 under 35 U.S.C. § 102.

The Office Action rejects independent claim 1, as well as independent claim 25, under 35 U.S.C. §103 as obvious over Fujii, U.S. Patent Application No. 2001/0008607, at the time of the invention in view of Frase, U.S. Patent No. 4,526,485. Applicants request reconsideration of this rejection because (1) Applicants respectfully note that Frase statements cited in the Office Action do not in any way suggest incorporating into the Fujii compressor a bearing that accommodates both radial and axial loads, and (2) Fujii specifically teaches against making such a modification.

Frase Does *Not* Teach One Skilled In The Art To Use A Bearing That Accommodates Both The Axial And Radial Loads Of The Swash Plate In Fujii

The Office Action acknowledges that Fujii does not disclose the use of a bearing adapted to accommodate both the axial and radial load. However, the Office Action cites Frase, which discloses such a bearing, and states that it would have been obvious to incorporate this type of bearing into the compressor of Fujii, citing several reasons mentioned in Frase. Specifically, the Office Action observes that "Frase et al. teach that their *sealed bearings* have several benefits, including simplification of design (col. 1, ln 12-13), reduction of problems in assembly (col. 1, ln. 15-18), and prevention of fouling damage to the bearing (col. 1, ln, 37-40 and 47-50)" Final O.A. at 2-3 (emphasis

added). As even the Office Action seems to recognize when making this statement, these advantages discussed in Frase relate to using a sealed bearing, not to using a bearing that accommodates both the radial and axial loads.

Applicants respectfully note that this discussion in Frase of these various advantages has nothing at all to do with advantages to be obtained from using a radial + axial load accommodating bearing. Instead, Frase—which is directed to a "Sealed Rolling Element Bearing"—is teaching how one can obtain certain advantages by using a sealed bearing. As for simplifying the design, Frase teaches that "sealed bearings simply design because, in general, no additional packing is required, and the lubricant fill suffices for the life of the bearing." Col. 1, lns. 11-14. As for fouling damage, Frase explains how an unsealed bearing can cause this by allowing in dirt, stating: "Such dirt entering the rolling element chamber from the outside substantially shortens the life of the bearing. Severe fouling may even result in destruction of the bearing." Col. 1, lns. 37-40. As for reducing problems in assembly, again, Frase teaches "The installation space for such sealed rolling bearings is small, assembly is problem-free, and the hazard of fouling damages during installation or in service is non-existent. Col. 1, lns. 15-18. Whether the bearing requires more space or experiences fouling damage has nothing to do with whether a standard radial bearing is replaced with a bearing for accommodating both radial and axial loads.

Applicant respectfully notes that the Frase reference itself is relatively clear that it is discussing the advantages of using a *sealed* bearing. However, independent claims

1 and 25 do not recite a sealed bearing. They recite a bearing that is adapted to accommodate both the axial and radial load. Frase offers no suggestion that it would be advantageous to incorporate such a bearing into a compressor design such as Fujii.

Fujii Specifically Teaches Against Replacing Its Bearing Assembly With A Bearing That Accommodates Both The Axial And Radial Loads Of The Swash Plate

Even more significant than the fact that the Office Action has not identified a reason why one skilled in the art would be motivated to incorporate a bearing that accommodates both the axial and radial loads of the swash plate into the compressor of Fujii is the fact that Fujii specifically teaches against such a modification.

Fujii discloses a compressor that uses a standard roller bearing (25) as the swash plate's radial bearing, and a separate thrust bearing (24) for accommodating the axial load. Applicants note that this is precisely the type of radial bearing + thrust bearing solution that the present invention aimed to improve upon by employing the claimed single-bearing design. *See* Paragraph 0006 of the present application. Unlike the present invention—which aims to minimize the number of bearings used in coupling the inner and outer parts of a compressor swash plate by replacing the radial + thrust bearing design with a single bearing that can accommodate both loads—Fujii specifically teach against this.

Applicants respectfully point out that Fujii is relatively clear that its primary objectives are reducing axial vibration and reducing mechanical loss. *See* Abstract;

Para. 0007. Both of these, however, would be increased by making the modification suggested in the Office Action.

First, Fujii reduces axial vibration by using a standard radial bearing for the rotation and a separate thrust bearing for the axial movement, thereby, ensuring smooth rotation. Para. 0008. Unlike the separate thrust bearing used by Fujii, the single bearing of the present invention—while useful for achieving the present invention's objective of reducing the number of bearings—does not provide any dampening effect. This is a principal objective of Fujii, and the reference specifically teaches to use a separate thrust bearing to deal with axial thrust, and thus, explicitly teaches against replacing this separate-radial-and-thrust-bearings design with the bearing disclosed in Frase.

Similarly, Fujii reduces mechanical loss by using these two separate roller and thrust bearings, and specifically, by using a "roller bearing with small frictional resistance." Para. 0008. Making the modification suggested in the Office Action would serve to increase the friction on the bearing, not decrease it. Again, while this single bearing design achieves the aims of the present invention, it is one of the primary objectives of the Fujii reference to minimize mechanical loss, and thus, Fujii specifically teaches against using a bearing like that disclosed in Frase.

If the rejections are to be sustained, Applicants respectfully request that the Examiner identify where there is a suggestion to incorporate the single, radial + axial

load accommodating bearing into the compressor of Fujii, and that the Examiner further explain why Fujii does not specifically teach against doing so, as outlined above. Otherwise, Applicants respectfully request that the Examiner please allow the claims.

Applicants submit that, in light of the amendment herein, generic claim 1 is allowable, and thus, withdrawn claims 4-7, 9, and 11-12 are also allowable. Accordingly, it is respectfully submitted that claims 1-12 and 25 are in order for allowance, and early notice to that effect is respectfully requested.

Respectfully submitted,

April 7, 2008

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